

Claims Status

1. (Original) An aircraft tug hitch assembly for coupling an aircraft tug to an aircraft tow bar having a hitching aperture at one end wherein said tug has a hitch at the rear thereof including upper and lower plates vertically spaced at a rearwardly opening horizontal slot for receiving said one end of the tow bar said upper and lower plates having coaxially aligned openings, said aircraft tug hitch assembly comprising: a locking assembly having a mounting plate fixedly connected to said upper plate and having an opening aligned with said openings in said upper and lower plates; a cylinder having a bore coaxially with said openings in said plates; a cylindrical piston slidable in said bore; a cylindrical locking pin slidably coaxially attached on a lower end of said piston in coaxial alignment with said opening in said plates and freely slidable between a lowered position extending through the openings in the plates and a raised position spaced above said horizontal slot; a vertical slot is formed in said cylinder; a transverse pin member attached to said piston and extending outwardly through said vertical slot; a notch in the upper portion of said cylinder adjacent said vertical slot; and means for rotating said piston and positioning said pin member at said notch to establish said locked position; a transversely extending handle pivotally connected to said locking assembly, said handle engaging said pin member at middle portion thereof for moving said pin from said lowered position to said raised position; a pair of laterally spaced inwardly converging guide members carried said horizontal slot on said hitch, said guide members defining a receiving pocket aligning said one end of said tow bar with the openings in the plates and permitting movement of said locking bolt from said raised position to said lowered position to couple the tow bar to the tug,

said guide members; means for pivotally supporting said guide members at inner ends to said locking assembly; spring means engaging and biasing said guide members to a normal position establishing said pocket, said spring means enabling resilient deflection of said guide members from said normal position upon impact by said tow bar sufficiently to permit said tow bar to orient transverse to the tug and accommodate tight radius turns.

2. (Original) The hitch assembly as recited in claim 1 including an upwardly extending rod member attached to said piston and carrying an indicating member at the upper end thereof, said rod member configured such that said indicator member is observable by an operator of the tug when said locking assembly is in the raised position and not observable by the operator when the locking assembly is in the lowered position whereby the operator can determine the locking status of the hitch assembly without assistance from other personnel.

3. (Currently Amended) A hitch assembly for coupling an aircraft tug to a tow bar, said tug having a hitch at the rear including upper and lower plates vertically spaced at a rearwardly opening slot for receiving the eyelet of the tow bar wherein said plates have coaxially aligned openings and said eyelet of the tow bar has an aperture, said hitch assembly comprising: a locking assembly fixedly connected to said upper plate, said locking assembly including a cylinder having a bore coaxially with the openings in the plate, and a lock member coaxially attached to a piston slidable in said bore; a lock member slidably supported on said locking assembly in coaxial alignment with said opening in said plates and freely slidable between a lowered locked position extending through the openings in the plates and a raised unlatched position spaced above the slot ; wherein a vertical slot is formed in said cylinder and said piston has a transverse pin attached thereto and

extending outwardly through said vertical slot, said pin engaged by said lifting means for moving said piston and said lock member between said locked position and said unlocked position; lifting means coaxing with said lock member for moving said lock member from said locked position and said unlocked position; detent means coaxing with said lock member for releasably maintaining lock member in said unlocked position; a pair of laterally spaced inwardly converging guide members carried on said hitch between said plates defining a receiving pocket aligning said eyelet with said openings in the plates and the aperture in the eyelet thereby permitting movement of said lock member from said unlocked position to said locked position to couple the tow bar to the tug.

4. Cancelled

5. (Currently Amended) The hitch assembly as recited in claim 4 3 wherein a vertical slot is formed in said cylinder and said piston has a transverse pin attached thereto and extending outwardly through said vertical slot, said pin engaged by said lifting means for moving said piston and said lock member between said locked position and said unlocked position.

6. (Currently Amended) The hitch assembly as recited in claim 5 3 wherein said detent means includes a notch in the upper portion of said cylinder adjacent said vertical slot, and means for rotating said piston and positioning said pin member into said notch to establish said unlocked position.

7. (Original) The hitch assembly as recited in claim 6 wherein said lifting means includes a transversely extending handle pivotally connected to said locking assembly, said handle engaging said pin member at a middle portion thereof for moving said pin member toward said locked position.

8. (Original) The hitch assembly as recited in claim 3 wherein said guide members are pivotally supported at inner ends to said locking assembly and

spring means for biasing said guide members to a normal position establishing said pocket, permitting resiliently deflection from said normal position upon impact by the eyelet of the tow bar sufficient to permit the tow bar to orient transverse to the tug to accommodate tight radius turns.

9. (Original) The hitch assembly as recited in claim 8 wherein said spring means include a compression spring for biasing said guide members to said normal position.

10. (Original) The hitch assembly as recited in claim 3 including an upwardly extending rod member attached to said lock pin and carrying an indicating member at the upper end thereof, said rod member configured such that said indicator member is observable by an operator of the tug when the locking assembly is in the unlocked condition and not observable by the operator when the locking assembly in the locked position whereby the operator can determine the locking status of the hitch assembly without assistance from other personnel.

11. (Currently Amended) The hitch assembly as recited in claim 9 10 wherein said indicator member is spherically shaped.

12. (New) A hitch assembly for coupling an aircraft tug to a tow bar, said tug having a hitch at the rear including upper and lower plates vertically spaced at a rearwardly opening slot for receiving the eyelet of the tow bar wherein said plates have coaxially aligned openings and said eyelet of the tow bar has an aperture, said hitch assembly comprising: a locking assembly fixedly connected to said upper plate, said locking assembly includes a cylinder having a bore coaxial with the openings in the plate; a lock member slidably supported in said bore for movement between a lowered locked position extending through the openings in the plates and a raised unlatched position spaced above the slot; lifting means coacting with said lock member

for moving said lock member from said locked position and said unlocked position; detent means coacting with said lock member for releasably maintaining lock member in said unlocked position thereby permitting movement of said lock member from said unlocked position to said locked position; a pair of laterally spaced inwardly converging guide members pivotally carried on said hitch between for rotation about vertical axes, said plates having a normal position providing a receiving pocket aligning said eyelet with said openings in the plates and the aperture in the eyelet; and spring means for biasing said guide members to said normal position and for permitting resiliently deflection from said normal position upon impact by the eyelet of the tow bar sufficient to permit the tow bar to orient transverse to the tug to accommodate tight radius turns.

13. (New) A hitch assembly for coupling an aircraft tow bar having an eyelet with a vertical aperture, said hitch assembly comprising: an aircraft tug having a hitch at the rear including upper and lower plates vertically spaced at a rearwardly opening slot for receiving the eyelet of the tow bar, said plates have coaxially aligned openings coaxial with said eyelet of the tow bar in a coupling position; a locking assembly fixedly connected to said upper plate, said locking assembly including a cylinder having a bore coaxial with the openings in said plates; a lock member slidably supported in said bore for movement between a lowered locked position extending through said openings in said plates and a raised unlatched position spaced above the slot; lifting means coacting with said lock member for moving said lock member from said locked position to said unlocked position; detent means coacting with said lock member for releasably maintaining lock member in said unlocked position thereby permitting movement of said lock

member from said unlocked position to said locked position; a pair of vertically extending and laterally inwardly converging guide members pivotally carried on said hitch between said plates providing a receiving pocket aligning said eyelet with said openings in said plates and the aperture in the eyelet of the tow bar in the coupling position.